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# フラストレーションと時間の間隔がボランティアに及ぼす影響 Effects of Frustration and Temporal Distance on Altruistic Behavior

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The present study investigated whether frustration, a type of antisocial affect that has not been investigated in previous studies, reduces helping, and if so, whether an extended time between a request for help and the helping act itself mitigates any negative effects of frustration. Participants in Experiment 1 ( $N=116$ ) received either an unsolvable/difficult anagram (intended to induce frustration) or an easy anagram, and then read a letter requesting volunteers for recording printed materials for visually-impaired students, either within 2–3 days (near future) or 1 month later (distant future). Helping was measured as a decision to help and the numbers of pages participants were willing to record. In Experiment 2, a different group of participants ( $N=81$ ) followed the same procedure; however, helping time interval was modified to within 4–5 days (near future) versus 1 year later (distant future). There were no effects of mood or time on either decision to help or amount of helping in either Experiment. The results imply that frustration is qualitatively different from other forms of antisocial affect (e.g., anger), at least in terms of impact on helping decisions. Factors that might have contributed to the findings are discussed.

**Keywords:** altruism, time effects, frustration.

## Effects of Frustration and Temporal Distance on Altruistic Behavior

Many individuals today live with stress due to hectic schedules, which can produce negative mood such as frustration. Such circumstances may consequently lead to a difficulty having concern for other people and not engage in altruistic behavior. Altruism is defined as “the belief in or practice of disinterested and selfless concern for the well-being of others” (The New Oxford American Dictionary, 2005, p. 47). Some altruistic behaviors require risking one’s own life and social status, such as sacrificing oneself to save a life from a fatal accident or participating in a civil rights movement. These

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altruistic behaviors may be publicized through reports in newspapers and magazines, and the helpers will be praised and admired (Rosenhan, 1970). However, most people in everyday life rarely encounter these critical altruistic events. Rather, they are more likely to face simple altruistic tasks such as giving rides to friends, bringing food to the poor, purchasing candy for fundraisers, and spending time with the elderly in a nursing home.

Despite the fact that individuals generally perceive altruistic behavior as ethically appropriate, individuals in a negative mood may perceive altruistic behavior as bothersome and annoying because they tend to be self-focused and are not able to pay attention to others' needs (Gendolla, Abele, Andrei, Spurk, & Richter, 2005). However, if individuals in a negative mood are able to think about the ethical importance of helping and look at the potential benefit of helping, then they may help others. When individuals think about an event occurring in the distant future, they tend to focus on the purpose of the event rather than the specific content and consequently reach an ethical decision (Nassbaum, Trope, & Liberman, 2003; Trope & Liberman, 2000). Therefore, individuals may think the importance of helping and likely help others regardless of their negative mood when helping is needed in the distant future. Also, because individuals in a negative mood are less likely to help others compared with individuals in a neutral mood but a distant helping event may draw more altruistic behavior compared with a near helping event, an increase of altruistic behavior is greater for individuals in a negative mood compared with individuals in a neutral mood when helping occurs in the distant future. The present study investigated how negative mood, such as frustration, affects helping, and if so, how time of helping, the near future and the distant future, mitigate the negative effect of frustration on helping.

### Effects of Positive and Negative Mood on Altruistic Behavior

Emotion or mood can be a significant factor in altruistic behavior. On one hand, individuals in a positive mood favorably evaluate prosocial behavior such as helping and generosity (Carlson, Charlin, & Miller, 1988) and seem to help others spontaneously rather than out of obligation (Cunningham, Steinberg, & Grey, 1980; Isen, 2000). Because they recognize that altruistic behavior generates positive outcomes which maintain or even enhance their current positive mood (Kahana, Kahana, & Zhang, 2005; Sprecher, Fehr, & Zimmerman, 2007), they seem to be spontaneously seeking an opportunity to help others.

On the other hand, effects of negative mood on altruistic behavior depend on the type of negative mood. For example, feeling of guilt enhances altruistic behavior (Konecni, 1972; Rawlings, 1968). Cunningham, Steinberg, and Grey (1980) reported that while 73% of participants in the positive mood condition helped to pick up the dropped papers, 80% of participants in the guilt condition also did so. This demonstrated that guilty individuals are as helpful as individuals in a positive mood, suggesting that guilty feeling enhances the likelihood of engaging in altruistic behavior. According to Regan (1971), guilty individuals may be motivated to reduce their feelings of guilt by engaging in altruistic behavior so that they are able to compensate for their actions in past and expiate their feelings of guilt. Sad-

ness is another type of negative mood that promotes altruistic behavior (Cialdini, Darby, & Vincent, 1973; Cialdini & Kenrick, 1976; Cialdini, Schaller, Houlihan, Arps, Fultz, & Beaman, 1987; Schaller & Cialdini, 1988). In the experiment of Schaller and Cialdini, participants in the high empathy condition felt sadder and became more helpful than participants in the low empathy condition. The result demonstrated that empathy is closely associated with sadness, and individuals in high level of empathy feel sadder and give more helping than individuals in low level of empathy.

Unlike guilt and sadness, other types of negative mood (e.g., anger) decrease altruistic behavior. A number of studies reported that anger decreases the tendency to engage in altruistic behavior (Cann & Blaskwelder, 1984; Feldt, Jagodzinski, & McKinley, 1997; Shaffer & Graziano, 1983). For example, Reisenzein (1986) asked participants to read a scenario describing a drunken person lying on subway floor and answer a questionnaire about their mood and their intention to help the person lying on the floor. The results showed that participants who felt angry toward the person expressed weaker intention to help compared with participants who did not feel angry. This result demonstrated that angry individuals are less likely to help people in distress compared with non-angry individuals.

Negative moods, such as anger, are characterized as antisocial affects (Staub, 2004). Antisocial affects drive individuals against socializing and conforming to others (Carlson & Miller, 1987) and discourage individuals from engaging in altruistic behavior (Manucia, Baumann, & Cialdini, 1984). Anderson (2004) reported that individuals who play violent video games showed antisocial affects such as anger and hostility and consequently decreased altruistic behavior. Hence, individuals who are experiencing antisocial affects are difficult to consider for others and are unlikely to engage in altruistic behavior.

According to Staub (2004), frustration is another type of antisocial affects. When individuals are prevented from psychological needs such as task accomplishment, they experience frustration. Frustrated individuals may be occupied with their own frustration and may not be able to consider others' needs, and as a result, they may not likely to engage in altruistic behavior. Nevertheless, if frustrated individuals overcome their self-focused mind, see other people's need, and possibly value the potential benefits of altruistic behavior, they may help others. It may be possible that frustrated individuals still help others if they are able to perceive helping as essential, ethical, and beneficial not only for the recipients but also for themselves, rather than they perceive helping as beneficial only for the recipients but bothersome, inconvenient, and troublesome for the help providers.

### Construal Level Theory and Altruistic Behavior

Trope and Liberman (2000) proposed Construal Level Theory (CLT) to describe the impact of different types of mental representation of an event on individuals' responses to the event. According to Trope and Liberman, an event can be construed in two distinct ways of high-level construal and low-level construal. High-level construal consists of simple, general, rational, and deliberate ideas, whereas low-level construal consists of complex, concrete, specific, irrational, and egoistic ideas. When individuals evaluate an item, primary features of an item are represented in high-level construal and second-

ary features of an item are represented in low-level construal. For example, Trope and Liberman described that when an individual purchases a radio set, sound quality is represented as high-level construal, whereas built-in clock is represented as low-level construal.

Fujita, Trope, Liberman, and Levin-Sagi (2006) suggested that high-level construal involves the general idea of the “why” aspects of action, whereas low-level construal involves the specific idea of the “how” aspects of action. Accordingly, when individuals consider actions in terms of the “why” question such as “why the action is important,” they generate an idea in high-level construal which leads them to seek the goal-relevant information. In contrast, when individuals consider actions in terms of the “how” question such as “how I bring the action,” they generate an idea in low-level construal which leads them to seek the goal-irrelevant information.

Liberman, Sagristano, and Trope (2002) suggested that psychological distance also plays an important role in representing an event as either high-level or low-level construal. One of the psychological distances is the temporal distance (or length of time) of an event to occur (Trope & Liberman, 2000). High-level construal becomes dominant when temporal distance increases, whereas low-level construal becomes dominant when temporal distance decreases.

Nussbaum, Trope, and Liberman (2003) demonstrated the impact of temporal distance on individuals' prediction of other people's behavior. Participants in an experiment were instructed to predict how a target person whom they know well will behave in various situations in a couple of days later or in a few months later. The results showed that when participants predicted the target person's behavior which will occur in a few months later, they engaged in high-level construal in that they predicted general behavior which is consistent to the nature of the target person. In contrast, when participants predicted the target person's behavior that will occur in a couple of days later, they engaged in low-level construal in that they predicted specific behavior which is often inconsistent to the nature of the target person.

In another experiment by Nussbaum, Trope, and Liberman (2003), participants read scenarios describing particular events (e.g., a job interview) and their outcomes (e.g., get hired) which occur either in the next couple of days (near future) or in a year later (distant future). Upon reading the scenarios, participants were asked to imagine the causes of the outcomes of the events. The results showed that when participants thought about the outcomes of the distant future events, they attributed them to the general and global causes (e.g., I get the job because I meet the requirement). When participants thought about the outcomes of the near future events, they attributed them to the incidental and specific causes (e.g., I get the job because I look energetic today). These findings proved that high-level construal represents general and global features of events and becomes dominant as temporal distance increases, while low-level construal represents complex and specific features of events and becomes dominant as temporal distance decreases.

Given that high-level construal consists of general and rational ideas and is activated under the increased temporal distance, the amount of time (i.e., increasing temporal distance) prior to a helping event may influence the likelihood of helping to occur. When individuals consider participating in a

helping event that occurs in the future, they may represent helping in terms of high-level construal and look at the important aspect of helping (e.g., the ethical importance of helping). In contrast, when individuals consider a helping event that occurs fairly soon, they may represent helping in terms of low-level construal and focus on the specific procedures that are involved in helping.

Individuals in antisocial affects, such as frustration, tend to be self-focused and self-interested (Gendolla et al., 2005). Accordingly, they cannot think rationally and consider others. Metcalfe and Mishel (1999) argued that individuals in a negative mood are encouraged to think rationally and induce a deliberative reaction when they think about the cognitive factors (i.e., knowledge or facts) rather than affective factors (i.e., emotion or desire) of stimuli. For example, when individuals think about the cognitive factor of candy (e.g., round and small rather than sweet and tasty), they are able to control their thoughts and suppress impulsive behavior. Although high temporal distance is not a cognitive factor of helping, Trope and Liberman (2000) argued that simply considering an event in the distant future automatically directs individuals to think rationally regardless how they are currently feeling. When individuals in antisocial affects such as anger and frustration consider a helping event that will occur fairly soon, their current negative mood may prevent them from considering the ethical importance or personal benefits of helping. In contrast, when individuals in antisocial affects consider a helping event that will occur in the future, they may be able to look beyond their current negative mood and consider more abstract and rational aspects of helping. Therefore, individuals in antisocial affects may be able to consider helping in an ethical manner and participate in a helping event if a helping event occurs in the distant future.

### Experiment 1

Experiment 1 investigated the effect of frustration and the effect of time that helping is needed on altruistic behavior. Whether to participate in a helping event might depend on when helping is needed, the near future or the distant future. In addition, the present study investigated how time influences individuals in different moods on altruistic behavior, examining how individuals in a neutral mood and frustration react when they are asked to volunteer in the near future compared with being asked to volunteer in the distant future. Accordingly, three hypotheses were proposed.

Hypothesis 1: Frustrated individuals would be less likely to engage in altruistic behavior compared with individuals in a neutral mood. Although several studies found that individuals who play violent video games and watch aggressive films have an increased antisocial affect such as anger, hostility, or aggression and are unlikely engage in altruistic behavior (Anderson, 2004; Chambers & Ascione, 1987; Muller, Nelson, & Donnerstein, 1977), no studies seemed to have directly investigated the relationship between frustration and altruistic behavior. According to Staub (2004), frustrated individuals refuse to conform to others and induce antisocial behavior; therefore, frustrated individuals would be less likely to engage in helping behavior than individuals who are not frustrated.

Hypothesis 2: Individuals would be more likely to engage in altruistic behavior when helping is needed in the distant future than in the near future. The notion of Construal Level Theory (CLT)

was adopted in the present study to examine whether individuals, regardless of their mood, would increase the likelihood of engaging in altruistic behavior when a helping event occurs in the distant future. According to CLT, increasing the length of time leads individuals to engage in high-level construal and induces a deliberative response regardless of how they are currently feeling (Fujita et al., 2006). Therefore, when helping is needed in the distant future, individuals would increase their likelihood to help.

Hypothesis 3: When helping is needed in the distant future, both individuals in frustration and in a neutral mood would increase their likelihood to help others. However, the amount of the increment to help would be different between individuals in a neutral mood and frustration: a) When helping is needed in the near future, frustrated individuals would be less likely to help others compared with individuals in a neutral mood. It is because frustrated individuals tend to be self-focused (Gendolla, et al., 2005) and cannot consider others. b) When helping is needed in the distant future, both individuals in a neutral mood and frustration would be equally likely to help others because frustrated individuals is able to overcome their self-focused mind and perceive helping as ethical and essential, and thus significantly increase their likelihood of helping others.

## Method

### Participants

One hundred thirty eight students (30 males, 108 females) who were taking introductory psychology courses at California State University, Long Beach participated in this experiment to fulfill part of the course credit requirement. Participant ages ranged from 18 to 32 years old ( $M=19$  years).

### Materials and Procedures

The experiment was conducted one person at a time. Participants were randomly assigned to one of four conditions (frustration/near future, frustration/distant future, neutral mood/near future, neutral mood/distant future). An experimenter informed participants that the purpose of the experiment is to investigate the effects of a cognitive task on mood. After participants signed the consent form, they were given an anagram task for mood manipulation. There were two versions of the anagram task, difficult/ unsolvable and easy. Difficult/unsolvable anagrams are commonly used to induce frustration successfully in psychology experiments (Cackowski & Nasar, 2003; Gordon, 1980). Participants in the frustration condition received 8 difficult and unsolvable anagrams (Frank & Noble, 1984; Sarason, 1961) (e.g., E V S U O R N). All problems were presented on a single page. Participants were instructed to solve all problems within 4 minutes. Participants were informed that average college students with average intelligence and motivation are able to solve 8 anagrams at the same level of difficulty in 4 minutes (Sarason, 1984; Sarason & Sarason, 1986). Participants were also told that the experimenter would stand nearby and remind them of each minute's passing. Participants in the neutral mood condition received 15 easy anagrams (e.g., B W E). All words were presented on a single page. Participants in the neutral mood condition were instructed to solve all problems on their pace

with no time limit and asked to knock at the door when they finished. Participants were left alone in the room. After the anagram task, participants in both conditions rated their current mood on a 7-point scale (1=strongly disagree and 7=strongly agree). The mood scale, adopted from Elsbach and Barr (1999), contained 3 positive affects (happy, pleased, cheerful) and 4 negative affects (frustrated, annoyed, stressed, anxious).

After completing the mood scale, the experimenter told participants that she needed 5 minutes to prepare for the next task and asked participants to read a letter ostensibly written from the chairperson of the psychology department while waiting for the next task. The experimenter explained to participants that the chairperson closely works with the office of Disabled Student Services (DSS) at California State University, Long Beach and wrote the letter for the benefit of the office. The letter stated that the office of DSS was recruiting volunteer students who are willing to read and record printed materials such as textbooks and university newspapers into audio devices for visually-impaired students. The letter also stated that it would take approximately 5 minutes to record per page and that participants could check out the recording devices to enable them to work at a location convenient for them. The letter was written on the university letterhead and signed by the chairperson of the psychology department. Participants in the near future condition read a letter requesting volunteers within 2-3 days, whereas participants in the distant future condition read a letter requesting volunteers 1 month later. Participants were requested to fill out a reply form, which was attached to the letter, to indicate when helping was needed (either within 2-3 days or 1 month later), whether or not they would like to volunteer and the number of pages they are willing to record if they decided to volunteer. Participants were requested to return the reply form regardless of whether or not they would participate in the volunteer event.

After the five minute period, the experimenter returned to collect the reply form and presented the next task, a construal-level manipulation questionnaire. The construal-level manipulation questionnaire, adopted from the study of Liberman and Trope (1998), contained 19 task statements. Participants were asked to choose one of two alternative identifications that seemed the best description of each task statement. The two alternative identifications explained how (i.e., low-level construal) and why (i.e., high-level construal) a task is implemented. For example, for the task of "paying the rent," participants were asked to choose one of two alternative identifications, "writing a check" (how task) or "maintaining a place to live" (why task). Participants in the near future condition were told that the task will occur within 2-3 days. Participants in the distant future condition were told that the task will occur 1 month from now. Finally, participants indicated on a 7-point scale (1=not at all and 7=very much) their motivation and importance in solving the anagrams along with their age and sex. The experiment was ended when the experimenter debriefed participants and thanked them for their participation.

## Results

Of 138 participants, 16 participants whose mood was not manipulated by the anagram task (i.e., 10 participants in the frustration condition who circled a number from 1 to 4 on the frustration scale



and 6 participants in the neutral mood condition who circled a number from 5 to 7 on the frustration scale) were deleted from the analysis. Additionally, 6 participants with legitimate reasons for the decision to help (i.e., 2 participants for lack of English proficiency, 3 participants for currently working in the office of DSS, 1 participant for not understanding the instruction) were also deleted from the analysis. Accordingly, a total of 22 participants (15.9%) were deleted, leaving 116 participants to be included in the analysis.

### Manipulation Checks

To ensure that the anagrams successfully manipulated participants' mood, the amounts of frustration between the frustration condition and the neutral mood condition were compared. The result of an independent-sample t-test showed that participants in the frustration condition ( $M=6.13$ ,  $SD=.74$ ) were significantly more frustrated compared with participants in the neutral mood condition ( $M=1.72$ ,  $SD=1.04$ ),  $t(105.56)=-26.39$ ,  $p<.001$ . Therefore, the anagrams successfully manipulated participants' frustration.

The near and future time was manipulated by providing letters which stated that helping was needed within 2–3 days and 1 month from now, respectively. To ensure that participants understood the time that helping was needed, they were asked to indicate their understanding of the time line for helping along with their decision to help or not. All participants correctly understood the time line that was given to them. The only exception was one participant in the distant future condition who indicated that helping would be needed within 3 days because he counted days from the date that the letter was written (the date appeared on the upper left), instead of counting days from the day he read the letter. Because the time which the participant indicated was the same as the time in the near future condition, this participant was assigned to the near future condition.

### Altruistic Behavior

To test the effect of time on altruistic behavior, two different tests were conducted, one by investigating the effects of mood and time on the number of individuals who were willing to help and the other by investigating the effects of mood and time on the amount of helping among individuals who were willing to help.

**Mood and time on number of helpers.** A Chi-Square test of independence was conducted to examine whether decisions to help or not depended on participants' mood. Table 1 shows the percentages and numbers of participants who decided to help as a function of mood and time manipulation. Contrary to the prediction, the result showed that there was no significant relationship between mood and the number of participants who decided to help or not,  $\chi^2(1, N=116)=1.71$ ,  $ns$ , indicating that the number of participants who were willing to help was about the same between the neutral mood condition and the frustration condition. A separate Chi-Square test of independence was conducted to examine whether decisions to help depended on the time that helping is needed. Again, contrary to the prediction, the result showed that there was no significant relationship between time and the number

of participants who decided to help or not,  $\chi^2(1, N=116)=.01$ , *ns*, indicating that participants in the distant future condition were not significantly different in deciding to help from participants in the near future condition. Thus, individuals' mood and the time that helping is needed were not related to the decision to help.

**Mood and time on number of pages.** Next, the effects of mood and time on the number of pages participants were willing to record for visually-impaired students were examined. Because majority of participants (96 out of 116) decided not to help, this analysis was conducted with the participants who indicated to help ( $N=20$ ) so that the effects of frustration and time on the amount of helping can be examined without being overshadowed by the large proportion of zeros.

A  $2 \times 2$  between-subjects ANOVA was conducted to examine the effects of frustration and time on the number of pages participants were willing to record. Table 2 shows the mean numbers of pages participants were willing to record along with the standard deviations and sample sizes for each condition. The results of a  $2 \times 2$  between-subjects ANOVA showed no significant effect of mood,  $F(1, 16)=.30$ , *ns*, with neutral participants ( $M=12.85$ ,  $SD=15.41$ ) reporting about the same number of pages as frustrated participants ( $M=8.10$ ,  $SD=5.44$ ). The results also showed no significant effect of time,  $F(1, 16)=.08$ , *ns*, with mean number of pages for the near future condition was 8.95 ( $SD=5.30$ ) and mean number of pages for the distant future condition was 14.35 ( $SD=17.39$ ). The interaction between mood and time was also not significant,  $F(1, 16)=1.51$ , *ns*. Although it seems that neutral participants were willing to record more ( $M=16.69$ ,  $SD=18.91$ ) than were frustrated participants ( $M=5.00$ ,  $SD=0.00$ ) when helping is needed in the distant future, whereas frustrated participants ( $M=11.20$ ,  $SD=5.76$ ) were willing to record more than were neutral participants ( $M=6.70$ ,  $SD=4.18$ ) when helping is needed in the near future, the difference was not statistically significant. The non-significant effect might be due to a small sample size (e.g.,  $n=2$  for the frustration/distant future condition).

**Frustration as a predictor variable.** A simple regression analysis was conducted to predict the number of pages participants were willing to record from the amount of frustration. In this analysis, 16 participants whose mood was not manipulated by the anagram task were included, with a total of 132 participants. The result of a simple regression analysis showed that the amount of frustration marginally predicted the number of pages participants were willing to record,  $R^2=.15$ ,  $B=-1.76$ ,  $F(1, 130)=2.89$ ,  $p<.10$ . Further analyses were conducted to predict the number of pages from frustration in terms of time. When helping is needed in the near future, frustration did not predict the number of pages,  $R^2=.01$ ,  $B=-.17$ ,  $F(1, 64)=.60$ , *ns*. However, when helping is needed in the distant future, frustration significantly predicted the number of pages,  $R^2=.07$ ,  $B=-.96$ ,  $F(1, 64)=4.98$ ,  $p<.05$ . Thus, there was a tendency that increased frustration was associated with smaller number of pages to record, specifically when helping is needed in the distant future.

## Discussion

Among 116 participants who were included in the main analyses, only 20 participants decided to help the office of DSS for visually-impaired students, whereas 96 participants declined to help. A pos-

sible reason that the majority of participants declined to help is that the letter for soliciting help was not sufficiently motivating to induce volunteerism. No participants, however, noticed that the letter was bogus. A larger number of participants might decide to help if the content of the letter is modified to emphasize the difficulties faced by visually-impaired students.

The failure in inducing high-level construal for the distant future might be also a reason for only a few volunteers in the distant future condition. Although participants in the distant future condition understood that helping was needed one month later, they might not have perceived one month as the distant future and not have considered high-level construal of helping (e.g., ethical importance of helping), resulting in no effect of time on altruistic behavior. To check whether participants engaged in an appropriate construal level (i.e., low- or high-level construal) based on the time that helping was needed (i.e., within 2–3 days or one month from now, respectively), participants took a construal-level manipulation questionnaire at the end of experiment. The response to each statement of a task (e.g., paying rent) was coded as 0 if participants described the task in terms of how the task is addressed (e.g., writing a check) and coded as 1 if participants described the task in terms of why the task is required (e.g., maintaining a place to live). Then, the coded numbers of all 19 items in the questionnaire were added. A total number of the items would be smaller for participants in the near future condition compared with participants in the distant future condition if the times which were set in the experiment successfully induced the appropriate construal levels. The result of an independent-samples *t*-test showed that the total number of the items for participants in the near future condition ( $M=11.21$ ,  $SD=3.55$ ) was not significantly different from the total number of the items for participants in the distant future condition ( $M=11.29$ ,  $SD=3.91$ ),  $t(114)=-.11$ , *ns*. Thus, the times which were set in the experiment did not successfully manipulate the construal levels.

The unsuccessful manipulation of construal level could be due to the failure to set an appropriate time for the distant future. Although Trope and Liberman (2000), Nassbaum, Trope, and Liberman (2003), and Fujita et al. (2006) successfully manipulated construal level with several weeks later as the distant future (vs. a few minutes later as the near future for participating in the second session of their experiment), 2–3 months later as the distant future (vs. 2–3 days later as the near future for predicting behavior of a target person), and one year later as the distant future (vs. tomorrow as the near future for purchasing a radio set), the current experiment found that one month was not sufficient for evoking high-level construal. Future studies need to lengthen the time that helping is needed to potentially address this issue.

## Experiment 2

Experiment 2 was conducted to further investigate mood and time effects on altruistic behavior. It focused on inducing a high-level construal of helping (e.g., highlighting the ethical importance of helping) by lengthening the time interval between the request for help and the actual helping act. The hypotheses in Experiment 2 were the same as those in Experiment 1.

## Method

### Participants

One hundred fifty students (35 males, 111 females) who were taking psychology courses at Keio University participated in the experiment. Participant ages ranged from 18 to 24 years old ( $M=19$  years).

### Materials and Procedures

The experiment was conducted during class in a group setting. All materials used in Experiment 1 were translated into the Japanese language, except for the newly constructed anagrams, for which the number of problems and letters in each problem remained the same for both the frustration and neutral mood conditions. The letter requesting help was rewritten to emphasize the difficulties faced by visually-impaired students at Keio University, and helping times were modified from within 2–3 days to within 4–5 days in the near future condition and from 1 month later to 1 year later in the distant future condition. Accordingly, the times in the CLT manipulation questionnaire (Lieberman & Trope, 1998) were matched to the times used in the letter. In addition, one of the 19 task statements in the CLT questionnaire was deleted, given that participants might not understand the task due to cultural differences.

Participants were randomly assigned a packet (of either frustration or neutral condition) comprising the materials for all of the tasks. They were asked not to turn the pages unless instructed to do so. The procedures were the same as in Experiment 1, except for the anagram and letter as indicated above. All participants were asked to solve the anagrams within 4 minutes and to close the packet if they finished answering all problems in time. Because participants did not know that there were two versions of the anagrams, easy and difficult/unsolvable, participants in the frustration condition would feel rushed and frustrated while participants in the neutral mood condition finish and close the packet quite quickly. The contents of the letter were identical for both conditions, such that the learning assistance center at Keio University needed volunteer students who are willing to read and record printed materials into audio devices within 4–5 days. Participants in the near future condition were asked to assume that they received the letter today, and participants in the distant future condition were asked to assume one year from now.

## Results

Of 150 participants, 60 participants whose mood was not manipulated by the anagram task and nine participants who did not understand the time to help were removed from analysis. Consequently, 81 participants (54%) were included.

### CLT Manipulation Checks

The responses for the CLT manipulation checks were coded the same way as in Experiment 1, and

the mean scores for the near (within 4–5 days) and distant (1 year from now) future statements were computed. An independent-samples *t*-test was conducted to test whether the times led participants to construe the tasks in an appropriate level. The mean difference between the near future task ( $M=-1.80$ ,  $SD=2.50$ ) and the distant future task ( $M=1.76$ ,  $SD=2.46$ ) was significant,  $t(80)=-6.50$ ,  $p<.0001$ , suggesting that the manipulation for the time of helping successfully led participants to engage in an appropriate construal level.

### Altruistic Behavior

**Mood and time on number of helpers.** A Chi-Square test of independence was conducted to examine whether decisions to help depended on participants' mood. Table 3 shows the percentages and numbers of participants who decided to help as a function of mood and time manipulation. There was no significant relationship between mood and the proportion of participants who decided to help,  $\chi^2(1, N=81)=2.78$ , *ns*, indicating that participants in the frustration (41.2%) and neutral mood conditions (28.6%) were not different in terms of the decision to help. A separate Chi-Square test of independence was conducted to examine whether decisions to help depended on the time that helping is needed. Again, there was no significant relationship between time and the proportion of participants who decided to help,  $\chi^2(1, N=81)=1.00$ , *ns*, indicating that participants in the distant future (34.8%) and near future (32.4%) conditions were not significantly different in terms of the decision to help. Individuals' mood and the time that helping is needed were not related to whether individuals agreed to help others.

**Mood and time on number of pages.** The effects of mood and time on the number of pages participants were willing to record were examined by including only those who decided to help ( $N=28$ ). Table 4 shows the mean numbers of pages participants were willing to record along with the standard deviations and sample sizes for each condition. The results of a  $2 \times 2$  between-subjects ANOVA showed no significant effect of mood,  $F(1, 24)=.06$ , *ns*, with neutral participants ( $M=8.61$ ,  $SD=6.86$ ) reporting about the same number of pages as frustrated participants ( $M=8.71$ ,  $SD=4.73$ ). There was a significant effect of time,  $F(1, 24)=4.32$ ,  $p<.05$ , with the mean number (11.21;  $SD=6.21$ ) of pages for the near future condition being larger than that ( $M=6.75$ ;  $SD=4.78$ ) for the distant future condition. This result was the opposite of that predicted. The interaction between mood and time was not significant,  $F(1, 24)=0.00$ , *ns*.

**Frustration as a predictor variable.** A simple regression analysis was conducted to predict the number of pages participants were willing to record from the amount of frustration. Similar to the regression analysis conducted in Experiment 1, 60 participants whose mood was not manipulated by the anagram task were included, with a total of 141 participants. The result of a simple regression analysis showed that the amount of frustration was not significantly related to the number of pages participants were willing to record,  $R^2=.01$ ,  $B=-.04$ ,  $F(1, 139)=.01$ , *ns*. Hence, the amount of frustration was not a significant predictor for the amount of helping individuals are willing to offer.

## Discussion

Overall, 33.7 % of participants decided to help visually-impaired students. The proportion of participants who decided to help was larger in Experiment 2 than in Experiment 1 (17.2%) although in both cases a relatively large number of participants refused to help. Experiment 2 did not support the hypotheses that frustrated individuals would be less helpful than individuals in a neutral mood, or that more individuals would get involved in helping when it occurs in the distant as compared to the near future. Although there was no statistical difference between the neutral mood and frustrated individuals, a larger proportion of help responses occurred among the frustrated individuals. Contrary to the prediction, the amount of help was greater in the near future than the distant future condition, with the CLT manipulation successful on this occasion. The unequal number of participants in each condition might qualify these results. Possible reasons for the failure to support our hypotheses are discussed below.

## General Discussion

The present study investigated the effects of mood, time, and the interaction of these variables on altruistic behavior. The results across both experiments showed no difference in the number of individuals who decided to help as a function of mood. There was no effect of time in Experiment 1. However, in Experiment 2 there was a difference in amount of help offered between the near and distant future conditions in which the near future event induced more helping than the distant future event did. There was no interaction effect of mood and time on amount of help.

The first hypothesis in the present study was that frustrated individuals would be less likely to engage in altruistic behavior compared with individuals in a neutral mood. This hypothesis was not supported. However, the amount of frustration could somewhat predict the amount of helping (Experiment 1). There are several possible reasons why the present study did not find robust effects of frustration on altruistic behavior.

First of all, frustration might be qualitatively different from the other antisocial affects (e.g., anger) on the decision to help. Individuals who manifest antisocial affects, such as anger and frustration, are generally less likely to socialize or relate to others, given that they are in a state of self-absorption (Carlson & Miller, 1987; Staub, 2004). Past studies found the effect of anger on altruistic behavior (Cann & Blaskwelder, 1984; Feldt, Jagodzinski, & McKinley, 1997; Shaffer & Graziano, 1983); therefore, the effect of frustration was expected. However, the expected results did not occur, implying that frustration might serve a different function as an antisocial affect on the decision to help. For example, angry individuals are less helpful for any other people regardless of the cause of their anger, whereas frustrated individuals are less helpful for only people who are the cause of their frustration. In other words, angry individuals do not help anyone at all when they are angry; however, frustrated individuals help others if their cause of frustration is not people who need help. Further study is necessary to explore the possibility. Although the present study did not find an effect of frustration on helping,

since no previous study has examined the effects of frustration, it was significant in its attempt to investigate possible effects of frustration on altruistic behavior.

Other possible reason for failure to find the effect of frustration on the decision to help is that the mood manipulation might not have been sufficiently strong. Although attempting to solve difficult/unsolvable anagrams is stressful, this is not an everyday task. If frustration was induced by a typical or important task that might be directly related to the activities of everyday life, such as fixing an electrical appliance and taking coins out from a narrow opening, it might affect the decision to help.

The second hypothesis in the present study was that individuals would be more likely to engage in altruistic behavior when help is needed in the distant future compared with when help is needed in the near future. This hypothesis was not supported. Although participants appeared to have construed the requested volunteerism appropriately, many of them nonetheless declined to help.

According to Construal Level Theory (CLT), an event can be construed in two ways, high-level construal and low-level construal (Trope & Liberman, 2000). High-level construal consists of general and rational ideas, whereas low-level construal consists of specific and irrational ideas. High-level construal becomes dominant when temporal distance increases, whereas low-level construal becomes dominant when temporal distance decreases (Nussbaum, Trope, & Liberman, 2003). Because Trope and Liberman (2000), Nussbaum, Trope, and Liberman (2003), and Fujita et al. (2006) have argued that simply considering an event in the distant future directs individuals to think rationally regardless of how they are currently feeling, it was expected that a greater number of individuals would decide to help when help is needed in the distant future as compared to the near future. Experiment 1 failed the CLT manipulation, such that participants in the distant future condition might not have considered the helping event in high-level construal perspective. However, Experiment 2 was successful in terms of the CLT manipulation, suggesting that participants in the distant future condition would engage in high-level construal (i.e., rational thinking), considering helping to be ethically important. Despite this level of engagement, participants remained able to refuse to help.

The present study did not find the expected effects of frustration and time on altruistic behavior. As mentioned earlier, future studies should adopt a strong frustration task to potentially obtain larger effect sizes. In addition, setting an appropriate time in the distant future seems critical for the successful manipulation of construal level. An appropriate time in the distant future varies depending on individuals' characteristics. Although Experiment 1 participants did not perceive one month later to be the distant future, different participants (e.g., retired individuals, homemakers, part-time workers) may perceive this duration as sufficient to evoke high-level construal. Because different individuals perceive time differently, times in the distant future must be carefully determined.

The current study is important in its attempt to investigate the impact of frustration and time on altruistic behavior. Many individuals may wish to help others, yet today's life style characterized by busy schedules and high workloads may be a source of frustration, thus making them less able to help others. Because altruistic behavior is appreciated and valuable and because individuals can contribute to the well being of others and society by engaging in altruistic behavior, exploring the factors that

influence altruistic behavior is vital.

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## Appendix

Table 1 Percentage of Participants who were willing to Help as a Function of Mood and Time

	Near Future	Distant Future	Total
Neutral Mood	17.2 (5) <i>n</i> =29	25.8 (8) <i>n</i> =31	21.7 (13) <i>n</i> =60
Frustrated	17.9 (5) <i>n</i> =28	7.1 (2) <i>n</i> =28	12.5 (7) <i>n</i> =56
Total	17.5 (10) <i>n</i> =57	16.9 (10) <i>n</i> =59	17.2 (20) <i>N</i> =116

*Note.* Numbers of participants who were willing to help are in parentheses.

Table 2 Mean Number of Pages Participants were willing to Record for Yes-Help Sample (*N*=20)

	Near Future	Distant Future	Total
Neutral Mood	6.70 ( <i>SD</i> =4.18, <i>n</i> =5)	16.69 ( <i>SD</i> =18.91, <i>n</i> =8)	12.85 ( <i>SD</i> =15.41, <i>n</i> =13)
Frustrated	11.20 ( <i>SD</i> =5.76, <i>n</i> =5)	5.00 ( <i>SD</i> =0.00, <i>n</i> =2)	8.10 ( <i>SD</i> =5.44, <i>n</i> =7)
Total	8.95 ( <i>SD</i> =5.30, <i>n</i> =10)	14.35 ( <i>SD</i> =17.39, <i>n</i> =10)	11.65 ( <i>SD</i> =12.82, <i>N</i> =20)

*Note.* Standard deviations and sample sizes are in parentheses.

Table 3 Percentage of Participants who were willing to Help as a Function of Mood and Time

	Near Future	Distant Future	Total
Neutral Mood	23.8 (5) <i>n</i> =21	32.1 (9) <i>n</i> =28	28.6 (14) <i>n</i> =49
Frustrated	43.8 (7) <i>n</i> =16	38.9 (7) <i>n</i> =18	41.2 (14) <i>n</i> =34
Total	32.4 (12) <i>n</i> =37	34.8 (16) <i>n</i> =46	33.27 (28) <i>N</i> =83

*Note.* Numbers of participants who were willing to help are in parentheses.

Table 4 Mean Number of Pages Participants were willing to Record for Yes-Help Sample (*N*=8)

	Near Future	Distant Future	Total
Neutral Mood	11.50 ( <i>SD</i> =7.89, <i>n</i> =5)	7.00 ( <i>SD</i> =6.10, <i>n</i> =9)	8.61 ( <i>SD</i> =6.86, <i>n</i> =14)
Frustrated	11.00 ( <i>SD</i> =5.39, <i>n</i> =7)	6.43 ( <i>SD</i> =2.70, <i>n</i> =7)	8.71 ( <i>SD</i> =4.73, <i>n</i> =14)
Total	11.21 ( <i>SD</i> =6.21, <i>n</i> =12)	6.75 ( <i>SD</i> =4.78, <i>n</i> =16)	8.66 ( <i>SD</i> =5.78, <i>N</i> =28)

*Note.* Standard deviations and sample sizes are in parentheses.